

# **System Requirements for SAS<sup>®</sup> 9.4 Foundation for Microsoft Windows for x32**



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## Overview

The *System Requirements for SAS 9.4 Foundation for Microsoft Windows for x32* provides requirements for installing and running SAS 9.4 Foundation on 32-bit Microsoft Windows. This document was last updated for **SAS 9.4M8** (TS1M8).

You must update your system to meet the minimum requirements before running SAS 9.4 Foundation.

The following major requirements are listed in this document:

- Software Requirements
- Hardware Requirements
- Space Requirements
- Additional Features
- Specific Product Requirements

For additional information and to view the latest system requirements for your system, visit the SAS Install Center website: <https://support.sas.com/documentation/installcenter>.

## Additional Resources

### Configuring Your I/O Subsystem

SAS recommends the white paper titled *Best Practices for Configuring your I/O Subsystem for SAS 9 Applications*. You can access it here:

<https://support.sas.com/resources/papers/proceedings16/SAS6761-2016.pdf>.

### Troubleshooting System Performance Problems

For a list of papers that are useful for troubleshooting system performance problems, see <https://support.sas.com/kb/42/197.html>

## Maintenance Releases and Third-Party Support

If you do not upgrade SAS 9.4 Foundation with each maintenance release, you are assuming some risks. Your environment lacks the patches and security updates that are included with these releases. In addition, the only versions of third-party database technologies that are supported by an older SAS 9.4 maintenance release might not be supported by the third-party vendor. If your version of the database or client software is no longer supported by the vendor, SAS cannot troubleshoot issues that you might encounter because representatives from that vendor are not available to provide assistance.

In addition, SAS reserves the right to move products that are affected by a lack of third-party vendor support to SAS Limited Support. For the official SAS support policy regarding the loss of vendor support, see <https://support.sas.com/en/technical-support/services-policies/policies-for-sas-products.html#vendors>.

For more information about SAS Technical Support, visit <https://support.sas.com/techsup/>.

# Software Requirements

## Preparing for Installation

### File System Requirements

For releases prior to SAS 9.4M3, the 8.3 filename convention must remain enabled. The use of file systems supporting long filenames is recommended.

### Administrator Privileges

An installer must have administrator privileges to install various updates. This requirement ensures that SAS 9.4 Foundation can be completely and safely installed.

### Anti-virus and/or Firewall Software

Before you start, SAS recommends closing your anti-virus and firewall software. Some anti-virus and/or firewall configurations can prevent an application from installing successfully. If you are unable to close the anti-virus or firewall software, make sure that your configuration allows you to install software and to update the Registry. If your SAS installation fails and you have mandatory anti-virus or firewall software running, check with your system administrator.

### Windows Software Updates

SAS software requires the Microsoft .NET Framework, which SAS provides as a convenience. SAS obtains the latest version of .NET as a system redistributable from Microsoft when preparing SAS software for release. Such redistributables are tightly integrated with the Windows operating system update process. As a result, SAS strongly recommends that you apply the latest operating-system updates to maintain a fully secured environment.

A Microsoft bug associated with the method that an individual machine is using to retrieve periodic operating-system updates may cause an error during the installation. If you are running Microsoft Windows 8 Pro, Windows Server 2012, or Windows 8 Enterprise, SAS recommends performing the steps that are described in SAS Installation Note 48410 (<https://support.sas.com/kb/48/410.html>). These steps ensure that the SAS Deployment Wizard can successfully enable the required version of Microsoft .NET Framework on your system during the installation.

## Windows Environments

For more information about the Microsoft Windows operating systems that are supported in SAS 9.4, refer to the Supported Operating Systems web page:

<https://support.sas.com/resources/sysreq/hosts/pc/>.

**Note:** *Software distributed with the SAS release designation SAS 9.4M0 does not support Windows in 32-bit environments, but Windows 32-bit support is provided in SAS release 9.4M1 and later.*

### Server Operating Systems

**Important:** **SAS 9.4M8** does not support 32-bit Microsoft Windows Server operating systems.

### **Microsoft Windows Server 2008 Family**

SAS 9.4 Foundation is supported on the following 32-bit and 64-bit editions of the Windows Server 2008 family with SAS 9.4M1 through SAS 9.4M7:

- Microsoft Windows Server 2008 SP2 Enterprise Edition
- Microsoft Windows Server 2008 SP2 Standard Edition
- Microsoft Windows Server 2008 SP2 Datacenter Edition

SAS 9.4 Foundation is supported on the following 32-bit and 64-bit editions of the Windows Server 2008 R2 family with SAS 9.4M1 through SAS 9.4M7:

- Microsoft Windows Server 2008 R2 SP1 Enterprise Edition
- Microsoft Windows Server 2008 R2 SP1 Standard Edition
- Microsoft Windows Server 2008 R2 SP1 Datacenter Edition

**Important:** *Support for the Microsoft Windows Server 2008 family is not available starting with [SAS 9.4M8](#).*

### **Microsoft Windows Server 2012 Family**

SAS 9.4 Foundation is supported on the following (64-bit) editions of the Windows Server 2012 family with SAS 9.4M1 and later:

- Microsoft Windows Server 2012 Foundation Edition
- Microsoft Windows Server 2012 Essentials Edition
- Microsoft Windows Server 2012 Standard Edition
- Microsoft Windows Server 2012 Datacenter Edition

SAS 9.4 Foundation is supported on the following (64-bit) editions of the Windows Server 2012 R2 family with SAS 9.4M1 and later:

- Microsoft Windows Server 2012 R2 Foundation Edition
- Microsoft Windows Server 2012 R2 Essentials Edition
- Microsoft Windows Server 2012 R2 Standard Edition
- Microsoft Windows Server 2012 R2 Datacenter Edition

### **Microsoft Windows Server 2016 Family**

SAS 9.4 Foundation is supported on the following (64-bit) editions of the Windows Server 2016 family with SAS 9.4M5 and later:

- Microsoft Windows Server 2016 Essentials Edition
- Microsoft Windows Server 2016 Standard Edition with Desktop Experience
- Microsoft Windows Server 2016 Datacenter Edition with Desktop Experience

### **Microsoft Windows Server 2019 Family**

SAS 9.4 Foundation is supported on the following (64-bit) editions of the Windows Server 2019 family with SAS 9.4M6 and later:

- Microsoft Windows Server 2019 Standard Edition with Desktop Experience
- Microsoft Windows Server 2019 Datacenter Edition with Desktop Experience

### **Microsoft Windows Server 2022 Family**

SAS 9.4 Foundation is supported on the following (64-bit) editions of the Windows Server 2022 family with SAS 9.4M8:

- Microsoft Windows Server 2022 Standard Edition with Desktop Experience
- Microsoft Windows Server 2022 Datacenter Edition with Desktop Experience

## **Client Operating Systems**

**Important:** *The only 32-bit Windows operating system that is supported on SAS 9.4M8 is Windows 10 32-bit.*

**Windows 7 SP1 Professional, Ultimate, and Enterprise:** Supported for client installations of SAS 9.4 Foundation products and Base SAS 9.4M1 through SAS 9.4M7.

**Windows 8 Pro and Enterprise, Windows 8.1 Pro and Enterprise:** Supported for client installations of SAS 9.4 Foundation products and Base SAS 9.4M1 through SAS 9.4M7.

**Windows 10 Home, Pro, Enterprise, and Education:** Supported for client installations of SAS 9.4 Foundation products and Base SAS 9.4M1 and later.

**Windows 11 Home, Pro, Enterprise, and Education (64-bit):** Supported for client installations of SAS 9.4 Foundation products and Base SAS 9.4M1 and later.

**Windows 10 and Windows 11:** Supported for the Education Analytical Suite (EAS). The following list indicates the EAS products that are supported on Windows 7 and later:

**Notes:** *With SAS 9.4M1 through SAS 9.4M7, Windows 7 Home Premium, Windows 8, and Windows 8.1 were also supported. However, these EAS products are not supported individually on Windows 7 Home Premium, Windows 8, Windows 8.1, Windows 10, or Windows 11.*

- |  |              |
|--|--------------|
| • Base SAS                                     | • SAS/EIS    |
| • SAS/ACCESS Interface to Greenplum            | • SAS/ETS    |
| • SAS/ACCESS Interface MySQL                   | • SAS/FSP    |
| • SAS/ACCESS Interface to Microsoft SQL Server | • SAS/GRAPH  |
| • SAS/ACCESS Interface to ODBC                 | • SAS/IML    |
| • SAS/ACCESS Interface to PC Files             | • SAS/OR     |
| • SAS/ACCESS Interface to SAP ASE              | • SAS/QC     |
| • SAS/AF                                       | • SAS/SECURE |
| • SAS/ASSIST                                   | • SAS/SHARE  |
| • SAS/CONNECT                                  | • SAS/STAT   |



## Web Browsers

Both SAS 9.4 Foundation software and client applications support recent versions of popular web browsers to display SAS user interfaces. To run SAS clients, use a browser and platform combination that is listed on the following SAS Support page:

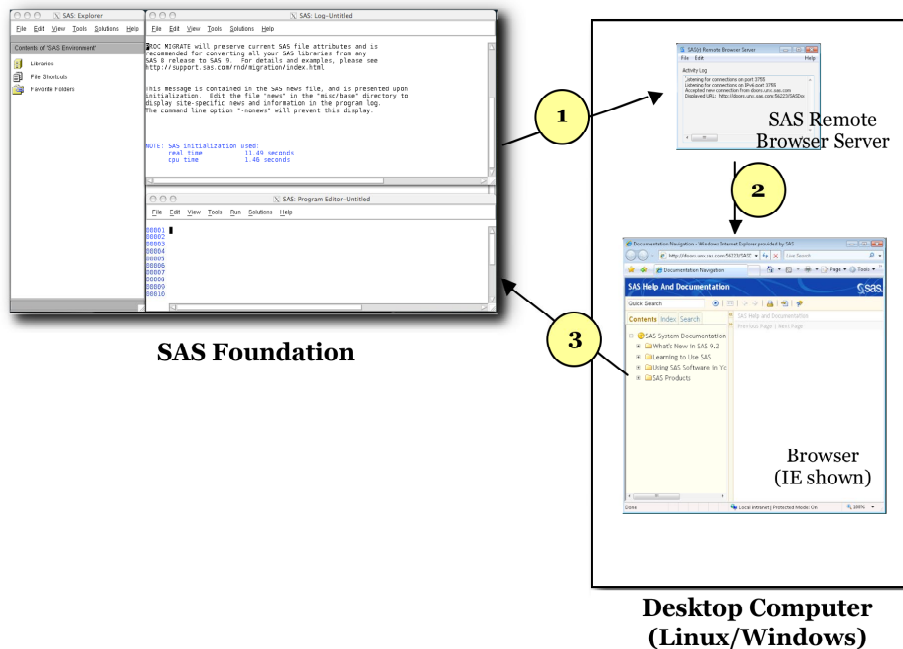
<https://support.sas.com/en/documentation/third-party-software-reference/9-4/support-for-9-4-web-browsers.html>.

Most SAS product user interfaces include HTML5 to support newer features. For example, SAS Visual Analytics provides an optional “modern” appearance mode. The individual system requirements documents for these products include a link to information about supported web browsers.

## Remote Browsing

SAS 9.4 Foundation uses Remote Browsing to display web-based information. Instead of running a browser on the workstation server, SAS 9.4 Foundation sends the URL to your desktop computer for display in a web browser. This feature removes the browser overhead from the server and allows for the display of output that requires browser plug-ins that do not run on a 64-bit computer. A software agent, the Remote Browser Server, is installed on your desktop computer to enable SAS to communicate with your browser.

SAS creates a URL that references the information to be displayed (usually program help or ODS output) and sends the URL to the SAS Remote Browser Server on your desktop computer (Step 1). The Remote Browser Server sends a request to the browser to display a page (Step 2). The browser then reconnects to SAS to retrieve the information and display it (Step 3).



With SAS 9.4M8, Remote Browsing runs on Windows 10 and Windows 11 and on 64-bit Linux. To support the remote browsing feature, your desktop computer must have a recent version of one of the following browsers installed:

- Google Chrome
- Microsoft Edge on Chromium
- Mozilla Firefox

The SAS Remote Browser Server, SAS Foundation, and client applications support 32-bit or 64-bit browser software. However, 64-bit browsers are recommended.

A supported operating system and browser and the Remote Browser Server must be installed and running on your desktop machine to enable Remote Browsing. The installer for the Remote Browser Server can be found on the [SAS 9.4 Software Downloads site](#). The browser must also be configured to allow pop-up windows. In addition, make sure that the default browser on the local machine is set to the browser that you want to use, and then select **Default Browser** for the **Display with browser** setting in the Remote Browser Preferences dialog box.

## Java Requirements

For information about Java Runtime Environment (JRE) requirements, refer to the SAS 9.4 Support for Java Runtime Environments web page, located at <https://support.sas.com/en/documentation/third-party-software-reference/9-4/support-for-java.html>.

## Security Requirements

Beginning with SAS 9.4M8, SAS Foundation servers use the cryptographic libraries that are available from the operating systems supported by SAS. Each SAS-supported cipher suite might not be available from all operating systems. When this issue is encountered, use a cipher suite that is supported by both SAS and that operating system, or install a third-party SSL provider for use by SAS.

For more information, see [Encryption in SAS 9.4](#).

## Hardware Requirements

The following recommendations are for new customers who install SAS 9.4 Foundation for Microsoft Windows for x32. (The hardware requirements for current SAS 9 customers remain unchanged.)

### ***Machines Supported***

SAS 9.4 supports x64 processor family systems, also known as Intel64 or AMD64 systems.

### ***Distribution Media***

The following distributions methods are supported:

- Electronic Software Delivery
- DVD

### ***System Configuration***

The following are recommended minimums\* for a deployment of SAS 9.4 on 32-bit Windows systems:

#### **Desktop Systems**

A 32-bit version of Windows 10 is supported.

- a minimum of 2 cores
- 2 GB RAM (available to SAS)
- Swap space: 1.5 times physical RAM or 250 GB, whichever is less

#### **Server Systems**

*Note:* Starting with Windows Server 2012, Microsoft no longer offers 32-bit versions of new Windows Server operating systems.

- a minimum of 4 cores
- 16 GB RAM (available to SAS)
- I/O Throughput of 400MB/sec
- Swap space: 1.5 times physical RAM or 250 GB, whichever is less

\* SAS recommends obtaining a hardware recommendation that is based on your estimated workload and number of users.

### ***Monitors Supported***

SVGA (resolution of 800x600 or higher)

### ***Space Requirements***

SAS 9.4 Foundation requires approximately 30 MB of disk space to complete the installation. These space requirements will vary depending on the blocking factor and compression algorithms that are in use on the installation disk drive.

SAS strongly recommends consulting with a SAS sizing expert to obtain an official hardware recommendation that is based on your estimated SAS workload and number of users. Disk space requirements are provided for individual components in separate documents. However, the space requirements that you can obtain from the individual System Requirements documents that are provided for SAS Solutions and other add-on products are not a substitution for expert advice. To request sizing expertise, send an email to [contactcenter@sas.com](mailto:contactcenter@sas.com).

## DBCS Support

The following list contains space requirements in MB for SAS 9.4 components that offer DBCS support.

| Software Product- DBCS Support                    | Disk Space (in MB)* |
|---|---------------------|
| Core of SAS 9.4 DBCS Support Files                | 34.0                |
| SAS/ACCESS Interface to DB2 DBCS Support Files    | 0.9                 |
| SAS/ACCESS Interface to Oracle DBCS Support Files | 0.3                 |
| SAS/AF DBCS Support Files                         | 0.5                 |
| SAS/CONNECT DBCS Support Files                    | 1.1                 |
| SAS/EIS DBCS Support Files                        | 0.4                 |
| SAS/Lab   | 1.9                 |
| SAS/SHARE DBCS Support Files                      | 0.1                 |
| <b>Total</b>                                      | <b>39.20</b>        |

\* The actual disk space size has been rounded. Therefore, the values will differ slightly from the ones shown by the installer.

## National Language Support (NLS)

The following list contains space requirements in MB for SAS 9.4 components that support Asian languages.

| Languages Supported   | Disk Space (in MB)* | See Table |
|-----------------------|---------------------|-----------|
| Chinese – Traditional | 3.0                 | below     |
| Chinese – Simplified  | 174.0               | below     |
| Japanese              | 262.0               | Page 9    |
| Korean                | 174.0               | Page 9    |

## Asian Language Support

The following lists contain space requirements in MB for SAS System components that support various Asian Languages.

| Traditional Chinese Support                | Disk Space (in MB)* |
|--|---------------------|
| Base SAS Traditional Chinese Support Files | 3.0                 |

| <b>Simplified Chinese Support</b>                               | <b>Disk Space (in MB)*</b> |
|---|----------------------------|
| Base SAS Simplified Chinese Support Files                       | 47.8                       |
| SAS/ACCESS Interface to DB2 Simplified Chinese Support Files    | 0.9                        |
| SAS/ACCESS Interface to Oracle Simplified Chinese Support Files | 0.9                        |
| SAS/AF Simplified Chinese Support Files                         | 2.0                        |
| SAS/CONNECT Simplified Chinese Support Files                    | 0.9                        |
| SAS/EIS Simplified Chinese Support Files                        | 1.9                        |
| SAS/GIS Simplified Chinese Support Files                        | 1.8                        |
| SAS/IntrNet Simplified Chinese Support Files                    | 1.8                        |
| SAS/SHARE Simplified Chinese Support Files                      | 0.8                        |
| <b>Total</b>  | <b>58.8</b>                |

| <b>Japanese Support</b>                               | <b>Disk Space (in MB)*</b> |
|---|----------------------------|
| Base SAS Japanese Support Files                       | 78.1                       |
| SAS/ACCESS Interface to DB2 Japanese Support Files    | 0.9                        |
| SAS/ACCESS Interface to Oracle Japanese Support Files | 0.9                        |
| SAS/AF Japanese Support Files                         | 2.0                        |
| SAS/CONNECT Japanese Support Files                    | 0.9                        |
| SAS/EIS Japanese Support Files                        | 10.1                       |
| SAS/GIS Japanese Support Files                        | 1.8                        |
| SAS/IntrNet Japanese Support Files                    | 1.8                        |
| SAS/SHARE Japanese Support Files                      | 0.8                        |
| <b>Total</b>  | <b>97.3</b>                |

| <b>Korean Support</b>                               | <b>Disk Space (in MB)*</b> |
|---|----------------------------|
| Base SAS Korean Support Files                       | 47.8                       |
| SAS/ACCESS Interface to DB2 Korean Support Files    | 0.1                        |
| SAS/ACCESS Interface to Oracle Korean Support Files | 0.1                        |
| SAS/AF Korean Support Files                         | 2.0                        |
| SAS/CONNECT Korean Support Files                    | 0.9                        |
| SAS/EIS Korean Support Files                        | 1.9                        |

| Korean Support                   | Disk Space (in MB)* |
|----------------------------------|---------------------|
| SAS/GIS Korean Support Files     | 1.8                 |
| SAS/IntrNet Korean Support Files | 1.6                 |
| SAS/SHARE Korean Support Files   | 0.8                 |
| Total                            | 57                  |

## Specific Product Requirements

### Base SAS Software

Requirements for SPD Engine on Microsoft Windows for x32:

SPDE will run with the minimum system specified in the Hardware Requirements section [on page 7](#). However, the following list provides the minimum recommended system guidelines to make use of SPDE functionality:

- An SMP (symmetric multiprocessing) computer with at least two CPUs; four are preferred
- At least one I/O channel per two CPUs
- Enough disk drives to have at least one mount point per CPU, isolated on its own disk; two mount points per CPU are preferred

### SAS Analytics Accelerator for Teradata

The SAS Analytics Accelerator for Teradata requires Base SAS, SAS/ACCESS Interface to Teradata, and at least one of the following products:

- SAS Enterprise Miner
- SAS/ETS
- SAS/STAT

SAS has extended SAS/ACCESS and SAS In-Database Technologies support to selected cloud and database variants of supported data sources. For a list of the supported variants, see <https://support.sas.com/en/documentation/third-party-software-reference/9-4/support-for-database.html>.

#### DBMS Products Required:

- Teradata Database 13.10 or later
- Teradata CLIV2 client libraries, Teradata Tools and Utilities (TTU) 13.10 - 16.20 for Windows (32-bit libraries)

#### For SAS 9.4M3

#### DBMS Products Required:

- Teradata Database 14.10 or later
- Teradata CLIV2 client libraries, TTU 14.10 - 16.20 for Windows (32-bit libraries)

### **For SAS 9.4M4 - 9.4M7**

#### **DBMS Products Required:**

- Teradata Database version 15.10 or later
- Teradata CLIV2 client libraries, TTU 15.10 - 16.20 for Windows (32-bit libraries)

### **For SAS 9.4M8**

#### **DBMS Products Required:**

- Teradata Database version 17.10 or later
- Teradata CLIV2 client libraries, TTU 17.10 or later for Windows (32-bit libraries)

## **SAS High-Performance Forecasting**

Base SAS is required for the installation of SAS High-Performance Forecasting software.

## **SAS In-Database Code Accelerator for Greenplum**

The SAS In-Database Code Accelerator for Greenplum requires Base SAS and SAS/ACCESS Interface to Greenplum. It also requires the SAS Embedded Process to be installed and configured on your database.

#### **DBMS Operating Systems:**

- Red Hat Enterprise Linux 64-bit, version 6.7 or later (recommended)
- SUSE Linux Enterprise Server 64-bit, version 11 or later with the latest Service Pack

#### **DBMS Products Required:**

- Greenplum Database 4.2.2
- Greenplum Partner Connector (GPPC) 1.2

### **For SAS 9.4M2 – 9.4M5**

#### **DBMS Products Required:**

- Greenplum Database 4.3 or later
- Greenplum Partner Connector (GPPC) 1.2 or later

In Greenplum 5.x, the Partner Connector library (GPPC) is integrated natively into the database. If you are using a Greenplum 5.0 or later database, it is not necessary to install the package. For best performance, SAS recommends using Greenplum 5.7 or later.

### **For SAS 9.4M6 and Later**

**DBMS Product Required:** Greenplum Database version 5.7 or later

For best results, SAS recommends having the latest Service Packs on the client and server.

## **SAS In-Database Code Accelerator for Hadoop**

The SAS In-Database Code Accelerator for Hadoop requires Base SAS and SAS/ACCESS Interface to Hadoop. It also requires the SAS Embedded Process to be installed and configured on Hadoop.

### **For SAS 9.4M4 – 9.4M6**

Hive 0.14 or later is required.

### **For SAS 9.4M7 and Later**

Hive 1.1 or later is required.

For supported Hadoop distributions and versions, refer to the following web page:  
<https://support.sas.com/en/documentation/third-party-software-reference/9-4/support-for-hadoop.html>.

SAS has extended SAS/ACCESS and SAS In-Database Technologies support to selected cloud and database variants of supported data sources. For more information about the supported variants, see <https://support.sas.com/en/documentation/third-party-software-reference/9-4/support-for-database.html>.

## **SAS In-Database Code Accelerator for Teradata**

The SAS In-Database Code Accelerator for Teradata requires Base SAS and SAS/ACCESS Interface to Teradata. It also requires the SAS Embedded Process to be installed and configured on your database.

Contact a Teradata representative to obtain the required support functions for the SAS Embedded Process. It is important to install the latest version from Teradata at Your Service. Teradata Customer Service coordinates installation of the SAS Embedded Process packages and application of the SAS Embedded Process support functions (sasepfunc) on the DBMS machine.

**Note:** *The version number for sasepfunc indicates the latest version of Teradata database that is supported. It is backward-compatible with Teradata Database 15.xx and earlier versions of Teradata Database 16.xx.*

SAS has extended SAS/ACCESS and SAS In-Database Technologies support to selected cloud and database variants of supported data sources. For a list of the supported variants, see <https://support.sas.com/en/documentation/third-party-software-reference/9-4/support-for-database.html>.

### **DBMS Products Required:**

- Teradata 13.10 or later
- Teradata CLIV2 client libraries, TTU 13.10 - 16.20 for Windows (32-bit libraries)

### **For SAS 9.4M3**

#### **DBMS Products Required:**

- Teradata Database 14.10 or later
- Teradata CLIV2 client libraries, TTU 14.10 - 16.20 for Windows (32-bit libraries)

### **For SAS 9.4M4 – 9.4M5**

#### **DBMS Products Required:**

- Teradata Database version 15.10 or later
- Teradata CLIV2 client libraries, TTU 15.10 - 16.20 for Windows (32-bit libraries)
- SAS Embedded Process support functions (sasepfunc-15.10-4)

### **For SAS 9.4M6 - 9.4M7**

#### **DBMS Products Required:**

- Teradata Database version 16.10 or later
- Teradata CLIV2 client libraries, TTU 16.10 - 16.20 for Windows (32-bit libraries)
- SAS Embedded Process support functions (sasepfunc-16.20-2)



### **For SAS 9.4M8**

#### **DBMS Products Required:**

- Teradata Database version 17.10 or later
- Teradata CLIV2 client libraries, TTU 17.10 or later for Windows (32-bit libraries)
- SAS Embedded Process support functions, latest version available

## **SAS Scoring Accelerator for Aster**

**Important:** Starting with SAS 9.4M8, SAS Scoring Accelerator for Aster is not available. If you upgrade or migrate SAS Foundation to SAS 9.4M8, SAS recommends that you install and use a different SAS/ACCESS engine and data source instead. Consult the system requirements for the selected SAS/ACCESS engine or contact your SAS representative for assistance.

If you have an existing installation of SAS Scoring Accelerator for Aster in your environment, SAS recommends that you first unconfigure and uninstall before upgrading or migrating to SAS 9.4M8. A best practice is to unconfigure retired SAS products before you upgrade and to uninstall them after you upgrade. For more information, see [“Unconfiguring and Uninstalling Retired Products”](#) in the SAS Guide to Software Updates and Product Changes.

SAS Scoring Accelerator for Aster requires Base SAS, SAS Enterprise Miner, SAS/ACCESS Interface to Aster, and SAS/STAT.

#### **DBMS Products Required:**

- Aster Server version 4.6.3, 5.0.1, 5.1, or 6.0
- Client utilities for Aster version 4.6.3, 5.0.1, or 5.1

**DBMS Operating System:** Red Hat Enterprise Linux 64-bit version 6.7 or later.

### **For SAS 9.4M2 and Later**

#### **DBMS Products Required:**

- Aster Server version 6.0
- Client utilities for Aster version 5.1

## **SAS Scoring Accelerator for DB2**

SAS Scoring Accelerator for DB2 requires Base SAS, SAS Enterprise Miner, SAS/ACCESS Interface to DB2, and SAS/STAT.

A current version of the IBM XLC compiler must be installed on the Db2 server where you will be publishing scores. Contact your IBM/Db2 representative to secure the appropriate compiler for your DB2 installation.

#### **DBMS Operating Systems:**

- IBM AIX 64-bit version 7.1 with Service Pack 3 or later
- Red Hat Enterprise Linux 64-bit, version 6.7 or later

#### **DBMS Products Required:**

- IBM Db2 version 10.1 with FixPack 1 or later
- Client utilities for IBM Db2 version 10.1 with FixPack 1 or later

### **For SAS 9.4M1 and Later**

#### **DBMS Products Required:**

- IBM Db2 version 10.5 or later
- Client utilities for IBM Db2 version 10.5 or later

For best results, SAS recommends installing the latest FixPack on the client and server.

## **SAS Scoring Accelerator for Greenplum**

The SAS Scoring Accelerator for Greenplum requires Base SAS, SAS Enterprise Miner, SAS/ACCESS Interface to Greenplum, and SAS/STAT.

#### **DBMS Operating Systems:**

- Red Hat Enterprise Linux 64-bit, version 6.7 or later
- SUSE Linux Enterprise Server 64-bit, version 11 or later with the latest Service Pack

#### **DBMS Products Required:**

- Greenplum Database version 4.2.2.0
- Greenplum Partner Connector (GPPC) version 1.2

### **For SAS 9.4M2 – 9.4M5**

#### **DBMS Products Required:**

- Greenplum Database version 4.3 or later
- Greenplum Partner Connector (GPPC) version 1.2 or later

In Greenplum 5.x, the Partner Connector library (GPPC) is integrated natively into the database. If you are using a Greenplum 5.0 or later database, it is not necessary to install the package. For best performance, SAS recommends using Greenplum 5.7 or later.

### **For SAS 9.4M6 and Later**

**DBMS Product Required:** Greenplum Database version 5.7 or later.

For best results, SAS recommends installing the latest Service Packs on the client and server.

## **SAS Scoring Accelerator for Hadoop**

The SAS Scoring Accelerator for Hadoop requires Base SAS, SAS/ACCESS Interface to Hadoop, and SAS/STAT. It also requires SAS Enterprise Miner or SAS Model Manager.

### **For SAS 9.4M4 – 9.4M6**

Hive 0.14 or later is required.

### **For SAS 9.4M7 and Later**

Hive 1.1 or later is required.

For supported Hadoop distributions and versions, refer to the following web page:  
<https://support.sas.com/en/documentation/third-party-software-reference/9-4/support-for-hadoop.html>.

SAS has extended SAS/ACCESS and SAS In-Database Technologies support to selected cloud and database variants of supported data sources. For more information about the supported variants, see

<https://support.sas.com/en/documentation/third-party-software-reference/9-4/support-for-database.html>.

## **SAS Scoring Accelerator for Netezza**

The SAS Scoring Accelerator for Netezza requires Base SAS, SAS Enterprise Miner, SAS/ACCESS Interface to Netezza, and SAS/STAT.

### **DBMS Products Required:**

- IBM Netezza version 7.0
- Client utilities for IBM Netezza version 7.0

### **For SAS 9.4M3 – 9.4M5**

#### **DBMS Products Required:**

- IBM Netezza version 7.0.3 or later
- Client utilities for IBM Netezza version 7.0.3 or later

### **For SAS 9.4M6 and Later**

#### **DBMS Products Required:**

- IBM Netezza version 7.2.1 or later
- Client utilities for IBM Netezza version 7.2.1 or later

For best results, match the Netezza ODBC client version with the version of the Netezza server where it will be connected. For example, if you have a Netezza server release 7.0.4, use the ODBC client driver release 7.0.4 with SAS/ACCESS Interface to Netezza.

## **SAS Scoring Accelerator for Oracle**

The SAS Scoring Accelerator for Oracle requires Base SAS, SAS Enterprise Miner, SAS/ACCESS Interface to Oracle, and SAS/STAT.

SAS has extended SAS/ACCESS and SAS In-Database Technologies support to selected cloud and database variants of supported data sources. For a list of the supported variants, see <https://support.sas.com/en/documentation/third-party-software-reference/9-4/support-for-database.html>.

### **DBMS Operating Systems:**

- Red Hat Enterprise Linux version 6.7 or later
- Oracle Enterprise Linux version 5.5 or later

### **DBMS Products Required:**

- Oracle Server version 11gR2 or later. The database encoding must be UTF8.
- Oracle Client 11gR2 (32-bit libraries) or later

**Notes:** *Some additional configuration might be required to use the 12c, 18c, or later client. See the [Configuration Guide for SAS 9.4 Foundation for Microsoft Windows for x32](#) for more information.*

*You can also use the Oracle Instant Client with SAS/ACCESS Interface to Oracle. However, if you find any issues, you should switch to the full Oracle client, which is the only Oracle client that SAS*

*uses in official tests. SAS Technical Support will only investigate issues that can be reproduced with the full Oracle client.*

For best results, SAS recommends installing the latest patches on the client and server.

## **SAS Scoring Accelerator for SPD Server**

The SAS Scoring Accelerator for SPD Server requires Base SAS, SAS Enterprise Miner, SAS Scalable Performance Data Server version 5.1, and SAS/STAT.

### **For SAS 9.4M3**

**DBMS Product Required:** SAS Scalable Performance Data Server version 5.2

### **For SAS 9.4M4**

**DBMS Product Required:** SAS Scalable Performance Data Server version 5.3

### **For SAS 9.4M5 and Later**

**DBMS Product Required:** SAS Scalable Performance Data Server version 5.4

## **SAS Scoring Accelerator for Teradata**

The SAS Scoring Accelerator for Teradata requires Base SAS, SAS/ACCESS Interface to Teradata, SAS Embedded Process support functions, and SAS/STAT.

You must also license either SAS Enterprise Miner or SAS Model Manager (or both), depending on the type of models that are exported. SAS Model Manager is required for STAT Linear models. SAS Enterprise Miner is required for Enterprise Miner models.

Contact a Teradata representative to obtain the required support functions for the SAS Embedded Process. It is important to install the latest version from Teradata at Your Service. Teradata Customer Service coordinates installation of the SAS Embedded Process packages and application of the SAS Embedded Process support functions (sasepfunc) on the DBMS machine.

**Note:** *The version number for sasepfunc indicates the latest version of Teradata Database that is supported. It is backward-compatible with Teradata Database 15.xx and earlier versions of Teradata Database 16.xx.*

SAS has extended SAS/ACCESS and SAS In-Database Technologies support to selected cloud and database variants of supported data sources. For a list of the supported variants, see <https://support.sas.com/en/documentation/third-party-software-reference/9-4/support-for-database.html>.

### **DBMS Products Required:**

- Teradata Database version 13.10 or later
- Client utilities for Teradata (CLIV2 client libraries), TTU 13.10 - 16.20 for Windows (32-bit libraries)

### **For SAS 9.4M3**

#### **DBMS Products Required:**

- Teradata 13 Database version 14.10.02.01 or later
- Teradata CLIV2 client libraries, TTU 14.10 - 16.20 for Windows (32-bit libraries)

### **For SAS 9.4M4 and 9.4M5**

#### **DBMS Products Required:**

- Teradata Database version 15.10 or later
- Teradata CLIV2 client libraries, TTU 15.10 - 16.20 for Windows (32-bit libraries)
- SAS Embedded Process support functions (sasepfunc-15.10-4 or later)

### **For SAS 9.4M6 - 9.4M7**

#### **DBMS Products Required:**

- Teradata Database version 16.10 or later
- Teradata CLIV2 client libraries, TTU 16.10 - 16.20 for Windows (32-bit libraries)
- SAS Embedded Process support functions (sasepfunc-16.20-2)

### **For SAS 9.4M8**

#### **DBMS Products Required:**

- Teradata Database version 17.10 or later
- Teradata CLIV2 client libraries, TTU 17.10 or later for Windows (32-bit libraries)
- SAS Embedded Process support functions, latest version available

## **SAS/ACCESS Interface to Amazon Redshift**

Base SAS is required for the installation of SAS/ACCESS Interface to Amazon Redshift.

SAS/ACCESS Interface to Amazon Redshift includes a required ODBC driver.

For instructions about how to configure SAS/ACCESS Interface to Amazon Redshift, see the [Configuration Guide for SAS 9.4 Foundation for Microsoft Windows for x32](#).

## **SAS/ACCESS Interface to Aster**

**Important:** Starting with [SAS 9.4M8](#), SAS/ACCESS Interface to Aster is not available. If you upgrade or migrate SAS Foundation to SAS 9.4M8, SAS recommends that you install and use a different SAS/ACCESS engine and data source instead. Consult the system requirements for the selected SAS/ACCESS engine or contact your SAS representative for assistance.

*If you have an existing installation of SAS/ACCESS Interface to Aster in your environment, SAS recommends that you first unconfigure and uninstall before upgrading or migrating to [SAS 9.4M8](#). A best practice is to unconfigure retired SAS products before you upgrade and to uninstall them after you upgrade. For more information, see “[Unconfiguring and Uninstalling Retired Products](#)” in the *SAS Guide to Software Updates and Product Changes*.*

Base SAS is required for the installation of SAS/ACCESS Interface to Aster.

SAS/ACCESS Interface to Aster requires the Aster ODBC driver and the bulk loading clients, ncluster\_loader.exe. To obtain the ODBC driver and bulk loading clients, contact Aster Data Technical Support.

**DBMS Products Required:**

- Aster Server version 4.5.1 or later
- Aster ODBC driver version 4.5.1 or later for Windows

**For SAS 9.4M3**

**DBMS Products Required:**

- Aster Server version 6.0 or later
- Aster ODBC driver version 5.1 or later for Windows

**For SAS 9.4M4 and Later**

**DBMS Products Required:**

- Aster Server version 6.1 or later
- Aster ODBC driver version 6.1 or later for Windows

Refer to the [Configuration Guide for SAS 9.4 Foundation for Microsoft Windows for x32](#) for information about where to install the ODBC driver and bulk loader client and how to configure your SAS software in order to work with them.

## **SAS/ACCESS Interface to DB2**

Base SAS is required for the installation of SAS/ACCESS Interface to DB2.

SAS/ACCESS Interface to DB2 can be installed on an IBM Db2 server or on a Db2 client node with an installation of the IBM Data Server Client. In addition, IBM Db2 Connect must be installed to connect to Db2 databases that reside on AS/400, VSE, VM, MVS, and z/OS systems.

**DBMS Products Required:**

- IBM Db2 version 10.1 or later
- Client utilities for IBM Db2 version 10.1 or later

**For SAS 9.4M1 - SAS 9.4M6**

**DBMS Products Required:**

- IBM Db2 version 10.5 or later
- Client utilities for IBM Db2 10.5 or later

**For SAS 9.4M7 and Later**

**DBMS Products Required:**

- IBM Db2 version 11 or later
- Client utilities for IBM Db2 11 or later

For best results, SAS recommends installing the latest FixPack on the client and server.

## SAS/ACCESS Interface to Greenplum

Base SAS is required for the installation of SAS/ACCESS Interface to Greenplum.

SAS/ACCESS Interface to Greenplum includes the required ODBC driver. For instructions, see “Configuring SAS/ACCESS Interface to Greenplum” in the [Configuration Guide for SAS 9.4 Foundation for Microsoft Windows for x32](#).

### DBMS Product Required:

Greenplum Database version 4.3 or later. SAS does not recommend using Greenplum Database versions 5.0 - 5.6.

### For SAS 9.4M6

DBMS Product Required: Greenplum Database version 5.7 or later

### For SAS 9.4M7 and Later

DBMS Product Required: Greenplum Database version 6.0 or later

## SAS/ACCESS Interface to Hadoop

Base SAS is required for the installation of SAS/ACCESS Interface to Hadoop.

### For SAS 9.4M4 – 9.4M6

Hive 0.14 or later is required.

### For SAS 9.4M7 and Later

Hive 1.1 or later is required.

For supported for Hadoop distributions and versions, refer to the following web page:  
<https://support.sas.com/en/documentation/third-party-software-reference/9-4/support-for-hadoop.html>.

SAS has extended SAS/ACCESS and SAS In-Database Technologies support to selected cloud and database variants of supported data sources. For more information about the supported variants, see <https://support.sas.com/en/documentation/third-party-software-reference/9-4/support-for-database.html>.

## SAS/ACCESS Interface to HAWQ

**Important:** Starting with SAS 9.4M8, SAS/ACCESS Interface to HAWQ is not available. If you upgrade or migrate SAS Foundation to SAS 9.4M8, SAS recommends that you install and use SAS/ACCESS Interface to Greenplum instead. Consult the system requirements for SAS/ACCESS Interface to Greenplum or contact your SAS representative for assistance.

If you have an existing installation of SAS/ACCESS Interface to HAWQ in your environment, SAS recommends that you first unconfigure and uninstall before upgrading or migrating to SAS 9.4M8. A best practice is to unconfigure retired SAS products before you upgrade and to uninstall them after you upgrade. For more information, see “Unconfiguring and Uninstalling Retired Products” in the SAS Guide to Software Updates and Product Changes. Base SAS is required for the installation of SAS/ACCESS Interface to HAWQ.

SAS/ACCESS Interface to HAWQ includes the required ODBC driver.

### **For SAS 9.4M3**

**DBMS Product Required:** HAWQ Database version 1.2.1 or later.

### **For SAS 9.4M4**

**DBMS Product Required:** HAWQ Database version 2.0 or later.

### **For SAS 9.4M5 and Later**

**DBMS Product Required:** HAWQ Database version 2.2 or later.

For instructions about how to configure SAS/ACCESS Interface to HAWQ, see the [Configuration Guide for SAS 9.4 Foundation for Microsoft Windows for x32](#).

## **SAS/ACCESS Interface to Impala**

Base SAS is required for the installation of SAS/ACCESS Interface to Impala.

### **DBMS Products Required:**

- Impala server version 1.2.3 or later
- ODBC Driver for Impala release 2.5.13 or later

### **For SAS 9.4M4 and Later**

### **DBMS Products Required:**

- Impala server version 2.6 or later
- ODBC Driver for Impala release 2.5.34 or later

## **SAS/ACCESS Interface to JDBC**

Base SAS is required for the installation of SAS/ACCESS Interface to JDBC.

SAS/ACCESS Interface to JDBC requires a Java Database Connectivity (JDBC) driver. JDBC drivers are often available from DBMS vendors and from other third-party JDBC driver developers. SAS recommends using JDBC drivers that comply with the JDBC 4.1 specification or later.

## **SAS/ACCESS Interface to Microsoft SQL Server**

Base SAS is required for the installation of SAS/ACCESS Interface to Microsoft SQL Server.

SAS/ACCESS Interface to Microsoft SQL Server includes the required ODBC driver.

**Note:** *With the release of SAS 9.4 M4, SAS/ACCESS Interface to Microsoft SQL Server now includes support for the Microsoft Azure SQL Database.*

SAS has extended SAS/ACCESS and SAS In-Database Technologies support to selected cloud and database variants of supported data sources. For a list of the supported variants, see <https://support.sas.com/en/documentation/third-party-software-reference/9-4/support-for-database.html>.

### **For SAS 9.4M3 and Later**

**DBMS Product Required:** Microsoft SQL Server 2012 or later

For information about how to configure SAS/ACCESS Interface to Microsoft SQL Server, see the [Configuration Guide for SAS 9.4 Foundation for Microsoft Windows for x32](#).



## **SAS/ACCESS Interface to MySQL**

Base SAS is required for the installation of SAS/ACCESS Interface to MySQL.

SAS has extended SAS/ACCESS and SAS In-Database Technologies support to selected cloud and database variants of supported data sources. For a list of the supported variants, see <https://support.sas.com/en/documentation/third-party-software-reference/9-4/support-for-database.html>.

### **DBMS Products Required:**

- MySQL Client version 5.1, 5.6, or 5.7
- MySQL Server version 5.1 or later

### **For SAS 9.4M4 – SAS 9.4M6**

#### **DBMS Products Required:**

- MySQL Client version 5.6 or later
- MySQL Server version 5.6 or later

### **For SAS 9.4M7 and Later**

#### **DBMS Products Required:**

- MySQL Client version 5.7 or 8.0.x
- MySQL Server version 5.7 or later (including MySQL 8.0.x)

For more information about SAS/ACCESS Interface to MySQL software, see the MySQL chapter in [SAS/ACCESS Software for Relational Databases: Reference](#).

## **SAS/ACCESS Interface to Netezza**

Base SAS is required for the installation of SAS/ACCESS Interface to Netezza.

SAS/ACCESS Interface to Netezza requires an ODBC driver from IBM. To obtain the IBM Netezza ODBC driver, release 4.6.2 or later, contact IBM Technical Support at (877) 426-6006, or visit the IBM Fix Central website, <http://www.ibm.com/support/fixcentral/>

### **DBMS Products Required:**

- IBM Netezza version 6.0 or later
- Client utilities for IBM Netezza version 4.6.2 or later

### **For SAS 9.4M2 – 9.4M5**

#### **DBMS Products Required:**

- IBM Netezza version 7.0 or later
- Client utilities for IBM Netezza version 7.0 or later

### **For SAS 9.4M6 and Later**

#### **DBMS Products Required:**

- IBM Netezza version 7.2.1 or later
- Client utilities for IBM Netezza version 7.2.1 or later

For best results, match the Netezza ODBC client version with the version of the Netezza server where it will be connected. For example, if you have a Netezza server release 7.0.4, use the ODBC client driver release 7.0.4 with SAS/ACCESS Interface to Netezza.

## **SAS/ACCESS Interface to ODBC**

Base SAS is required for the installation of SAS/ACCESS Interface to ODBC.

**DBMS Product Required:** An ODBC driver for the data source.

Before you can use SAS/ACCESS Interface to ODBC software, an ODBC driver for the data source from which you want to access data is required. ODBC drivers are often available from DBMS vendors and other third-party ODBC driver developers. The ODBC driver you select might require additional DBMS software for network access. All required network software supplied by your database system vendor must be 32-bit-compliant.

The 32-bit version of the ODBC Driver is required for the data source. All database clients for Windows 32 must be 32-bit.

See the [Configuration Guide for SAS 9.4 Foundation on Microsoft Windows for x32](#) for information about the installation.

## **SAS/ACCESS Interface to OLE DB**

Base SAS software is required for the installation of SAS/ACCESS Interface to OLE DB.

**DBMS Product Required:** An OLE DB data source provider

Before you can use SAS/ACCESS Interface to OLE DB software, an OLE DB provider for the desired data source is required. OLE DB providers are often available from DBMS vendors and other third-party software vendors. The OLE DB provider you select may require additional DBMS software for network access.

All required network software that is supplied by your database system vendor must be 32-bit-compliant. The 32-bit version of the OLE DB provider is required for the data source.

## **SAS/ACCESS Interface to Oracle**

Base SAS is required for the installation of SAS/ACCESS Interface to Oracle.

You can install an Oracle client on the same machine as SAS/ACCESS Interface to Oracle, or an Oracle server can be used in place of the Oracle client.

In order to use the Bulk Load feature of this SAS product, you must have the Oracle SQL\*Loader data-loading utility installed. This utility can be obtained by running the Oracle installer and selecting the Oracle Utilities product. Refer to your Oracle documentation for information on SQL\*Loader.

SAS has extended SAS/ACCESS and SAS In-Database Technologies support to selected cloud and database variants of supported data sources. For a list of the supported variants, see <https://support.sas.com/en/documentation/third-party-software-reference/9-4/support-for-database.html>.

**DBMS Products Required:**

- Oracle Database 11gR2 or later
- Oracle Client 11gR2 or later

**For SAS 9.4M7 and Later**

**DBMS Products Required:**

- Oracle Database 12.1 or later
- Oracle Client 12.1 or later

**Notes:** *Some additional configuration might be required to use the 12c, 18c, or later client. See the [Configuration Guide for SAS 9.4 Foundation for Microsoft Windows for x32](#) for more information.*

*You can also use the Oracle Instant Client with SAS/ACCESS Interface to Oracle. However, if you find any issues, you should switch to the full Oracle client, which is the only Oracle client that SAS uses in official tests. SAS Technical Support will only investigate issues that can be reproduced with the full Oracle client.*

For best results, SAS recommends installing the latest patches on the client and server.

## **SAS/ACCESS Interface to PC Files**

Base SAS is required for the installation of SAS/ACCESS Interface to PC Files.

**Product Required on Windows:** 32-bit or 64-bit SAS PC Files Server, running the same “bitness” of ACE (Microsoft Access Database Engine 2010 Redistributable) driver on the same Windows machine.

**DBMS Product Required on Windows:** Microsoft Access Database Engine 2010 Redistributable (ACE) or a later version.

SAS/ACCESS Interface to PC Files software supports access to virtually any data source through ODBC support on Windows, as well as the following software formats:

- dBase files (.dbf)
- Excel files (.xls, .xlsx, .xlsb, .xlsm)
- JMP files (.jmp is in Base SAS)
- Lotus files (.wk1, .wk3 and .wk4)
- Microsoft Access database files (.mdb or .accdb)
- Paradox(.db)
- SPSS files (.sav)
- Stata files (.dta)

SAS 9.4 will automatically install the Access Database Engine 2010 Redistributable (ACE driver) when you install SAS/ACCESS Interface to PC Files software if no previous ACE driver is installed; otherwise the existing ACE installation is left as is.

**Note:** *32-bit and 64-bit Microsoft ACE engines cannot co-exist on 64-bit Windows. SAS recommends installing a Microsoft ACE driver to match the SAS bitness on 64-bit Windows.*

Use of an ACCESS or EXCEL libname engine requires the installation of a 64-bit Microsoft ACE driver. If the message “ERROR: Connect: Class not registered” appears while you are using the libname ACCESS or EXCEL libname engine, you have the incompatible 32-bit Microsoft Access database engine (ACE) installed.

If you must use the 32-bit ACE driver with 64-bit SAS installed, a 32-bit PC Files Server must be used to bridge the “bitness gap” with PCFILES libname engine. You can run SAS PC Files Server as a Windows service or as an application listening to the PCFILES libname engine. SAS PC Files Server provides data encryption and authentication features with default port number 9621, which can be configured through the SAS PC Files Server application console. Note that the bitness (32-bit or 64-bit) of SAS PC Files Server must match that of the Microsoft ACE driver on the same Windows machine.

## **SAS/ACCESS Interface to PostgreSQL**

Base SAS is required for the installation of SAS/ACCESS Interface to PostgreSQL.

SAS/ACCESS Interface to PostgreSQL includes the required ODBC driver.

For SAS 9.4M8, PostgreSQL client 14.7 or later is required in order to bulk load and bulk unload files that are larger than 2 GB. Otherwise, the psql tool is limited to files that are smaller than 2 GB. You can download the latest client from the following PostgreSQL site:

<https://www.enterprisedb.com/downloads/postgres-postgresql-downloads>.

SAS has extended SAS/ACCESS and SAS In-Database Technologies support to selected cloud and database variants of supported data sources. For a list of the supported variants, see <https://support.sas.com/en/documentation/third-party-software-reference/9-4/support-for-database.html>.

**DBMS Products Required:** PostgreSQL Database version 9.1.9 or later.

### **For SAS 9.4M4 and 9.4M5**

**DBMS Products Required:** PostgreSQL Database version 9.1.23 or later.

### **For SAS 9.4M6 and Later**

**DBMS Product Required:** PostgreSQL Database version 9.5.14 or later.

## **SAS/ACCESS Interface to SAP ASE**

Base SAS is required for the installation of SAS/ACCESS Interface to SAP ASE (formerly SAS/ACCESS Interface to Sybase).

**Note:** *Connecting to SAP IQ is not supported by SAS/ACCESS Interface to SAP ASE; use SAS/ACCESS Interface to SAP IQ instead.*

**DBMS Product Required:** SAP ASE (Sybase) Open Client SDK, Release 15.7 or later.

**Note:** *SAS/ACCESS Interface to SAP ASE no longer supports access to Microsoft SQL Server data.*

*SAS/ACCESS Interface to SAP ASE software uses CTLIB API calls to access the SAP (Sybase) DBMS product. These CTLIB API calls are not supported by Microsoft SQL Server; therefore, you must use SAS/ACCESS Interface to Microsoft SQL Server with an appropriate ODBC driver in order to access Microsoft SQL Server data.*

## **SAS/ACCESS Interface to SAP HANA**

Base SAS is required for the installation of SAS/ACCESS Interface to SAP HANA.

SAS/ACCESS Interface to SAP HANA requires the ODBC driver (32-bit) for SAP HANA from SAP. The ODBC driver is part of the SAP HANA Client.

### **DBMS Products Required:**

- SAP HANA 1.0 SPS 08 Server or later
- SAP HANA ODBC Client for SAP HANA 1.0 SPS 08 or later

### **For SAS 9.4M4 - 9.4M6**

#### **DBMS Products Required:**

- SAP HANA 1.0 SPS 12 Server or later
- SAP HANA ODBC Client for SAP HANA 1.0 SPS 12 or later

### **For SAS 9.4M7 and Later**

#### **DBMS Products Required:**

- SAP HANA 2.0 SPS 4 Server or later
- SAP HANA ODBC Client for SAP HANA 2.2.83 or later

## **SAS/ACCESS Interface to SAP IQ**

Base SAS is required for the installation of SAS/ACCESS Interface to SAP IQ (formerly SAS/ACCESS Interface to Sybase IQ).

To obtain the required SAP IQ Network Client, contact your database administrator or SAP Technical Support.

### **DBMS Products Required:**

- SAP IQ Network Client version 15.4 or later
- SAP IQ Database version 15.4 or later

### **For SAS 9.4M3 – 9.4M5**

#### **DBMS Products Required:**

- SAP IQ Network Client version 16.0
- SAP IQ Database version 16.0

### **For SAS 9.4M6 - 9.4M7**

#### **DBMS Products Required:**

- SAP IQ Network Client version 16.0 or 16.1\*
- SAP IQ Database version 16.0 or 16.1

### **For SAS 9.4M8**

#### **DBMS Products Required:**

- SAP IQ Network Client version 16.1
- SAP IQ Database version 16.0 or 16.1

\* Prior to SAS 9.4M8, a hot fix for SAS/ACCESS Interface to SAP IQ is required in order to use version 16.1 of the client. Once you have applied the hot fix or upgraded to SAS 9.4M8, only the version 16.1 client is supported. See the following SAS note for instructions: [67439](#).

## **SAS/ACCESS Interface to Teradata**

Base SAS is required for the installation of SAS/ACCESS Interface to Teradata.

SAS has extended SAS/ACCESS and SAS In-Database Technologies support to selected cloud and database variants of supported data sources. For a list of the supported variants, see <https://support.sas.com/en/documentation/third-party-software-reference/9-4/support-for-database.html>.

TLS 1.2 is supported when using SAS/ACCESS Interface to Teradata. The Teradata database must use version 17.10 or later and TTU version 17.10 or later. When you have configured the database for TLS, you can encrypt data that is transferred between Teradata and SAS 9.4M8 or later. For more information, see [Configure TLS for SAS/ACCESS Connection to Teradata](#).

### **DBMS Products Required:**

- Teradata Database version 13.10 or later
- Teradata CLIV2 client libraries, TTU 13.10 - 16.20

### **For SAS 9.4M3**

#### **DBMS Products Required:**

- Teradata Database version 14.10 or later
- Teradata CLIV2 client libraries, TTU 14.10 - 16.20

### **For SAS 9.4M4 – SAS 9.4M6**

#### **DBMS Products Required:**

- Teradata Database version 15.10 or later
- Teradata CLIV2 client libraries, TTU 15.10 - 16.20

### **For SAS 9.4M7**

#### **DBMS Products Required:**

- Teradata Database version 16.10 or later
- Teradata CLIV2 client libraries, TTU 17.10 if using TPT and not using Legacy Utilities
- Teradata Database version 16.xx if using TTU 16.10 or TTU 16.20
- Teradata Database version 17.xx if using TTU 17.10

### **For SAS 9.4M8**

#### **DBMS Products Required:**

- Teradata CLIV2 client libraries, TTU 17.10 or later
- Teradata Database version 17.xx

For more information about SAS/ACCESS Interface to Teradata software, see the Teradata chapter in [SAS/ACCESS Software for Relational Databases: Reference](#).

## **SAS/AF**

### **Products Required for Build Mode:**

- Base SAS software
- SAS/AF software
- SAS/GRAPH software (to create and display some graphics objects)

Other products may be required, depending on the application.

### **Products Required for Run Mode:**

- Base SAS software
- SAS/GRAPH software (to display some graphics objects)

Other products may be required, depending on the application.

### **Printers:**

- A color or gray-scale printer is required for printing graphics-based objects.
- Depending on the object, certain non-graphic objects may require SAS/GRAPH software to print.

## **SAS/CONNECT**

Base SAS is required for the installation of SAS/CONNECT.

SAS/CONNECT software uses the TCP/IP access method and supports Microsoft's TCP/IP System Driver, which is provided with Microsoft Windows.

## **SAS/EIS**

### **Products Required for Build Mode:**

- Base SAS software
- SAS/AF software
- SAS/EIS software
- SAS/FSP software
- SAS/GRAPH software

Other products may be required, depending on the application.

### **Products Required for Run Mode:**

- Base SAS software
- SAS/GRAPH software
- SAS/EIS software

Other products may be required, depending on the application.

**Memory:** 128 MB required

**Printers:** For printing graphics-based objects, a color or gray-scale printer is required.

## SAS/Genetics

**Important:** Starting with SAS 9.4M8, SAS/Genetics is not available. In order to continue using SAS/Genetics, do not upgrade Base SAS or SAS Foundation to SAS 9.4M8.

A best practice is to unconfigure retired SAS products before you upgrade and to uninstall them after you upgrade. For more information, see [“Unconfiguring and Uninstalling Retired Products”](#) in the SAS Guide to Software Updates and Product Changes.

Base SAS and SAS/GRAPH are required for the installation of SAS/Genetics.

## SAS/GIS

Products Required for Build Mode:

- Base SAS software
- SAS/AF software
- SAS/GIS software
- SAS/GRAPH software

Other products may be required, depending on the application.

**Products Required for Run Mode:**

- Base SAS software
- SAS/FSP software
- SAS/GIS software
- SAS/GRAPH software

Other products may be required, depending on the application.

**Printers:** A color or gray-scale printer is required.

## SAS/GRAPH

The 32-bit or 64-bit version of Microsoft Edge is required to run the SAS/GRAPH ActiveX Graph Control from a web browser.

The 32-bit or 64-bit versions of Edge, Mozilla Firefox version 6.0 or later, or Google Chrome version 15 or later are required to run the SAS/GRAPH Java Applets from a web browser.

The Java plug-in must be installed in order for the SAS/GRAPH Java applets to be displayed in the SAS internal browser, Edge, Firefox, or Chrome. If the Java plug-in is not installed already, the SAS internal browser and Edge will prompt you for the installation, but the other web browsers will not. The Java runtime can be installed from the Java website before you run SAS Java applets.

If you are prompted to install the Java plug-in, you must refresh your browser after the plug-in is installed or the SAS/GRAPH Java applet will not display.



## **SAS/IML Studio**

SAS/IML Studio requires SAS/IML and SAS/STAT to run. SAS/IML Studio 15.1 requires SAS 9.4M6.

### **RAM and Disk Space**

4 GB minimum, 8 GB recommended. For the installation, 1 GB of disk space is required.

### **Display Settings**

SAS/IML Studio 15.1 requires at least 1024x768 screen resolution with 24-bit color. SAS recommends 1920x1080 resolution with 24-bit color.

## **SAS/IntrNet**

SAS/IntrNet software consists of several components that may be installed independently. SAS/IntrNet Server software is installed on an existing SAS System and is included on SAS 9.4 media.

### **CGI Tools and Applications**

#### ***Application Dispatcher***

Requires Base SAS software and SAS/IntrNet Server software. The Application Broker component of the Application Dispatcher must be installed on a web server.

#### ***htmSQL***

Requires Base SAS software, SAS/SHARE software, and a SAS/IntrNet software license (SETINIT). The htmSQL component must be installed on a web server.

#### ***MDDB Report Viewer Application***

Requires Base SAS software; SAS/GRAPH software; SAS/IntrNet software; and SAS/EIS software or SAS OLAP Server software. The Application Dispatcher component must be installed and configured.

#### ***Xplore Sample Web Application***

Requires Base SAS software and SAS/IntrNet Server software. The Application Dispatcher component must be installed and configured.

#### ***Design-Time Controls***

Requires Base SAS software and SAS/IntrNet Server software. The Application Broker component of the Application Dispatcher must be installed on a web server.

### **Java Tools and Applications**

#### ***SAS/CONNECT Driver for Java***

Requires Base SAS software, SAS/CONNECT software, and SAS/IntrNet Server software. SAS/SHARE software must also be installed if data services are used. The Java Tools package must be installed on a web server or a client system.

#### ***Tunnel Feature:***

Must be installed on a web server running on a UNIX or Windows system.

## **SAS/OR**

The use of graphics in SAS/OR software requires a SAS/GRAPH license.

## **SAS/TOOLKIT**

### **Products Included:**

- Base SAS software
- A compiler

The only language with a Production status for SAS/TOOLKIT software is C. Other languages have a Beta status.

## **SAS/Warehouse Administrator**

### Products Required for Build Mode

- Base SAS software
- SAS/AF software (required only for API usage)

### Products Required for Run Mode:

- Base SAS software
- Other products, depending on the application (e.g., SAS/ACCESS software for access to DBMS tables, SAS/CONNECT software for access to remote data, or SAS/AF software to access warehouse via method calls)

### Printers:

- For printing graphics-based objects, a color or gray-scale printer is required.
- Certain non-graphic objects may require SAS/GRAPH software to print, depending on the object.



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